

117TH CONGRESS
1ST SESSION

S. 1395

To promote scientific research and development opportunities for connected technologies that advance precision agriculture capabilities.

IN THE SENATE OF THE UNITED STATES

APRIL 27, 2021

Mrs. FISCHER (for herself and Ms. KLOBUCHAR) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To promote scientific research and development opportunities for connected technologies that advance precision agriculture capabilities.

1 *Be it enacted by the Senate and House of Representa-
2 tives of the United States of America in Congress assembled,*

3 SECTION 1. SHORT TITLE.

4 This Act may be cited as the “Advancing IoT for Pre-
5 cision Agriculture Act of 2021”.

6 SEC. 2. PURPOSE.

7 It is the purpose of this Act to promote scientific re-
8 search and development opportunities for connected tech-
9 nologies that advance precision agriculture capabilities.

1 **SEC. 3. NATIONAL SCIENCE FOUNDATION DIRECTIVE ON**

2 **AGRICULTURAL SENSOR RESEARCH.**

3 In awarding grants under its sensor systems and
4 networked systems programs, the Director of the National
5 Science Foundation shall include in consideration of port-
6 folio balance research and development on sensor connec-
7 tivity in environments of intermittent connectivity and
8 intermittent computation—

9 (1) to improve the reliable use of advance sens-
10 ing systems in rural and agricultural areas; and

11 (2) that considers—

12 (A) direct gateway access for locally stored
13 data;

14 (B) attenuation of signal transmission;

15 (C) loss of signal transmission; and

16 (D) at-scale performance for wireless
17 power.

18 **SEC. 4. UPDATING CONSIDERATIONS FOR PRECISION AGRI-**

19 **CULTURE TECHNOLOGY WITHIN THE NSF AD-**
20 **VANCED TECHNICAL EDUCATION PROGRAM.**

21 Section 3 of the Scientific and Advanced-Technology
22 Act of 1992 (42 U.S.C. 1862i) is amended—

23 (1) in subsection (d)(2)—

24 (A) in subparagraph (D), by striking
25 “and” after the semicolon;

(B) in subparagraph (E), by striking the period at the end and inserting “; and”; and

(C) by adding at the end the following:

“(F) applications that incorporate distance learning tools and approaches.”;

(2) in subsection (e)(3)—

(A) in subparagraph (C), by striking
l" after the semicolon;

(B) in subparagraph (D), by striking the word at the end and inserting “; and”; and

(C) by adding at the end the following:

“(E) applications that incorporate distance learning tools and approaches.”; and

(3) in subsection (j)(1), by inserting “agricultural,” after “commercial.”

16 SEC. 5. GAO REVIEW.

Not later than 18 months after the date of enactment of this Act, the Comptroller General of the United States shall provide—

(1) a technology assessment of precision agriculture technologies, such as the existing use of—

(A) sensors, scanners, radio-frequency identification, and related technologies that can monitor soil properties, irrigation conditions, and plant physiology;

(B) sensors, scanners, radio-frequency identification, and related technologies that can monitor livestock activity and health;

(C) network connectivity and wireless communications that can securely support digital agriculture technologies in rural and remote areas;

(D) aerial imagery generated by satellites or unmanned aerial vehicles;

(E) ground-based robotics;

(F) control systems design and connectivity, such as smart irrigation control systems; and

(G) data management software and advanced analytics that can assist decision making and improve agricultural outcomes; and

(2) a review of Federal programs that provide support for precision agriculture research, development, adoption, education, or training, in existence as of the date of enactment of this Act.

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